

Notice of Allowability

Application No.

10/086,725

Examiner

John Pezzlo

Applicant(s)

BUI, SANG T.

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 4 March 2002.
2. ☒ The allowed claim(s) is/are 1-47.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 11/12/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other See Continuation Sheet.


JOHN PEZZLO
PRIMARY EXAMINER

Continuation of Attachment(s) 9. Other. Drawings filed 4 March 2002 are accepted by the examiner.

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Alicia M. Choi, on Friday, 3 February 2006.

The claims have been amended as follows:

1. Claim 1, line 11, inserted after "link" --via any of the plurality of channels--.
2. Claim 1, line 12, inserted after "via" -- any of the plurality of channels of --.
3. Claim 6, line 15, inserted after "transceiver" --via any of the plurality of channels--.
4. Claim 6, line 17, inserted after "link" --via any of the plurality of channels--.
5. Claim 8, line 1, inserted before "7" -- claim --.
6. Claim 12, line 6, inserted after "signal" --via any of the plurality of channels--.
7. Claim 12, line 7, inserted after "link" --via any of the plurality of channels--.

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8. Claim 16, line 11, inserted after "link" -- via any of the plurality of channels --.

9. Claim 16, line 12, inserted after "via" -- any of the plurality of channels of --.

10. Claim 21, line 12, inserted after "link" -- via any of the plurality of channels --.

11. Claim 21, line 14, inserted after "link" -- via any of the plurality of channels --.

12. Claim 29, line 12, inserted after "via" -- any of the plurality of channels of --.

13. Claim 33, line 11, inserted after "link" -- via any of the plurality of channels --.

14. Claim 33, line 12, inserted after "signal" --via any of the plurality of channels--.

15. Claim 38, line 12, inserted after "link" -- via any of the plurality of channels --.

16. Claim 38, line 13, inserted after "within" -- any of the plurality of channels of --.

17. Claim 42, line 16, inserted after "transceiver" --via any of the plurality of channels--.

18. Claim 42, line 18, inserted after first "link" -- via any of the plurality of channels --.

19. Claim 46, line 18, inserted after "transceiver" --via any of the plurality of channels--.

20. Claim 46, line 20, inserted after "link" -- via any of the plurality of channels --.

Allowable Subject Matter

Claims 1-47 are allowable over the prior art of record.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Applicants have claimed uniquely distinct features in the instant invention, which are not found in the prior art, either singularly or in combination. Each independent claim identifies the following uniquely distinct features;

1. Regarding claim 1 – A method for generating diagnostic data signals by a first transceiver and a second transceiver operatively coupled via a communications link, the communications link including a plurality of channels, the method comprising: transmitting by the first transceiver to the second transceiver a first pulse signal via a first channel of the plurality of channels, transmitting by the second transceiver to the first transceiver a second pulse signal via a second channel of the plurality of channels, while continuously transmitting by the first transceiver the first pulse signal and by the second transceiver the second pulse signal, performing: transmitting by the first transceiver a test signal into the communications link via any of the plurality of channels, and receiving by the first transceiver via any of the plurality of

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channels of the communications link a data signal generated within the communications link in response to the test signal.

2. Regarding claim 6 – A method for generating diagnostic data signals by a first and a second transceiver operatively coupled via a communications link, the communications link including a plurality of channels, the method comprising: transmitting by the first transceiver to the second transceiver a pulse signal via a first channel of the plurality of channels, transmitting by the second transceiver to the first transceiver an idle signal via a second channel of the plurality of channels, while continuously transmitting the pulse signal by the first transceiver and the idle signal by the second transceiver, performing: transmitting by the first transceiver to the second transceiver a command signal via a third channel of the plurality of channels, receiving at the second transceiver from the first transceiver the command signal, transmitting by the second transceiver into the communications link a test signal, the test signal is generated by the second transceiver via any of the plurality of channels using the command signal, and receiving at the first transceiver from the communications link via any of the plurality of channels a data signal generated within the communications link in response to the test signal.

3. Regarding claim 12 – A method for generating diagnostic data signals by a transceiver operatively coupled to a communications link, the communications link including a plurality of channels, the method comprising: determining by the transceiver that no other transceivers are coupled to the communications link, transmitting by the transceiver into the communications link a test signal via any of the plurality of channels, and receiving by the first transceiver from the communications link via any of the plurality of channels a data signal generated within the communications link in response to the test signal.

4. Regarding claim 16 - A method for generating diagnostic data signals by a first transceiver operatively coupled to a communications link, the communications link including a plurality of channels, the method comprising: transmitting by the first transceiver to a second transceiver a first pulse signal via a first channel of the plurality of channels, receiving by the first transceiver from the second transceiver a second pulse signal via a second channel of the plurality of channels, while continuously transmitting by the first transceiver the first pulse signal and receiving by the first transceiver the second pulse signal, performing: transmitting by the first transceiver a test signal into the communications link via any of the plurality of channels, and receiving by the first transceiver via any of the plurality of channels of the communications link a data signal generated within the communications link in response to the test signal.

5. Regarding claim 21 – A method for generating diagnostic data signals by a first transceiver operatively coupled to a communications link, the communications link including a plurality of channels, the method comprising: transmitting by the first transceiver to a second transceiver a first pulse signal via a first channel of the plurality of channels, receiving by the first transceiver from the second transceiver an idle signal via a second channel of the plurality of channels, while continuously transmitting by the first transceiver the pulse signal and receiving by the transceiver the idle signal, performing: transmitting by the first transceiver to the second transceiver a command signal via a third channel of the plurality of channels, and receiving by the first transceiver from the communications link via any of the plurality of channels a data signal generated within the communications link by a test signal transmitted by the second transceiver into the communications link via any of the plurality of channels in response to the command signal.

6. Regarding claim 27 – A method for generating diagnostic data signals by a first transceiver assisted by a second transceiver operatively coupled via a communications link, the communications link including a plurality of channels, the method comprising: transmitting by the first transceiver to the second transceiver a first periodic pulse signal via a first channel of the plurality of channels, transmitting by the second transceiver to the first transceiver a second periodic pulse signal via a second channel of the plurality of channels, while continuously transmitting the first and second periodic pulse signals by the first and second transceivers respectively, performing: transmitting by the first transceiver a test signal via a third channel of the plurality of channels, and receiving by the first transceiver via a fourth channel of the plurality of channels a near end cross talk data signal generated within the communications link in response to the test signal.

7. Regarding claim 29 – A method for generating diagnostic data signals by a first transceiver assisted by a second transceiver operatively coupled via a communications link, the communications link including a plurality of channels, the method comprising: transmitting by the first transceiver to the second transceiver a first periodic pulse signal via a first channel of the plurality of channels, transmitting by the second transceiver to the first transceiver a second periodic pulse signal via a second channel of the plurality of channels, while continuously transmitting the first and second periodic pulse signals by the first and second transceivers respectively, performing the following steps: transmitting by the first transceiver a test signal via a third channel of the plurality of channels, and receiving by the first transceiver via any of the plurality of channels of the communications link a data signal generated within the communications link in response to the test signal.

8. Regarding claim 31 – A method for generating diagnostic data signals by a first transceiver assisted by a second transceiver operatively coupled via a communications link, the communications link including a plurality of channels, the method comprising: transmitting by the second transceiver to the first transceiver an idle signal via a first channel of the plurality of channels, transmitting by the first transceiver to the second transceiver a periodic pulse signal via a second channel of the plurality of channels; while continuously transmitting the pulse signal and idle signal by the first and second transceivers respectively, performing the following steps: selecting by the first transceiver a selected channel from the plurality of channels, generating by the first transceiver a command signal using an identification of the selected channel, transmitting by the first transceiver to the second transceiver the command signal via a third channel of the plurality of channels, receiving by the second transceiver from the first transceiver the command signal, determining by the second transceiver the selected channel using the command signal, transmitting by the second transceiver into the communications link via the selected channel a test signal, and receiving by the first transceiver from a channel of the plurality of channels a far end cross talk data signal generated within the communications link in response to the test signal.

9. Regarding claim 33 – A diagnostic data signal generator apparatus for a communications system having a first transceiver and a second transceiver coupled therebetween by a communications link having a plurality of channels comprising: a first transceiver controller controlling transmission of a first pulse signal transmitted by the first transceiver to the second transceiver over a first channel of the plurality of channels, a second transceiver controller controlling transmission of a second pulse signal transmitted by the second transceiver over a

second channel of the plurality of channels; the first transceiver controller controlling transmission by the first transceiver onto the communications link via any of the plurality of channels of a test signal, the first transceiver receiving a data signal via any of the plurality of channels generated within the communications link in response to the test signal, and the first pulse signal and the second pulse signal being periodic and continuously transmitted while the first transceiver transmits the test signal and receives the data signal.

10. Regarding claim 38 – A diagnostic data signal generator apparatus for a communications system having a first transceiver and a second transceiver coupled therebetween by a communications link having a plurality of channels comprising: a master diagnostic state machine controlling transmission of a first pulse signal by the first transceiver, the master diagnostic state machine being coupled through the first transceiver to the second transceiver via a first channel of the plurality of channels, and a slave diagnostic state machine controlling transmission of a second pulse signal by the second transceiver, the slave diagnostic state machine being coupled through the second transceiver to the first transceiver via a second channel of the plurality of channels, the first transceiver transmitting into the communications link via any of the plurality of channels a test signal, the first transceiver receiving a data signal generated within any of the plurality of channels of the communications link in response to the test signal, and the first pulse signal and the second pulse signal being periodic and continuously transmitted while the master diagnostic state machine controls transmission of the test signal and reception of the data signal.

11. Regarding claim 42 – A diagnostic data signal generator apparatus for a communications system having a first transceiver and a second transceiver coupled therebetween by a

communications link having a plurality of channels comprising: a first transceiver controller controlling transmission of a pulse signal by the first transceiver to the second transceiver over a first channel of the plurality of channels, and a second transceiver controller controlling transmission of an idle signal by the second transceiver over a second channel of the plurality of channels, the first transceiver controller controlling transmission by the first transceiver to the second transceiver a command signal via a third channel of the plurality of channels, the second transceiver controller controlling reception by the second transceiver from the first transceiver the command signal, the second transceiver controller controlling transmission by the second transceiver into the communications link of a test signal, the test signal generated by the second transceiver via any of the plurality of channels using the command signal, and the first transceiver controller controlling reception by the first transceiver from the communications link via any of the plurality of channels of a data signal generated within the communications link in response to the test signal, and the pulse signal and the idle signal being continuously transmitted while the first transceiver controller controls transmission of the command signal and reception of the data signal and the second transceiver controller controls reception of the command signal and transmission of the test signal.

12. Regarding claim 46 - A diagnostic data signal generator apparatus for a communications system having a first transceiver and a second transceiver coupled therebetween by a communications link having a plurality of channels comprising: a master diagnostic state machine controlling transmission of a periodic pulse signal, the master diagnostic state machine being coupled through the first transceiver to the second transceiver via a first channel of the plurality of channels, a slave diagnostic state machine controlling transmission of a periodic idle

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signal by the second transceiver, the slave diagnostic state machine being coupled through the second transceiver to the first transceiver via a second channel of the plurality of channels, the master diagnostic state machine controlling transmission by the first transceiver to the second transceiver a command signal via a third channel of the plurality of channels, the slave diagnostic state machine controlling reception by the second transceiver from the first transceiver the command signal, the slave diagnostic state machine controlling transmission by the second transceiver into the communications link of a test signal, the test signal generated by the second transceiver via any of the plurality of channels using the command signal, the master state machine controlling reception by the first transceiver from the communications link via any of the plurality of channels of a far cross talk data signal generated within the communications link in response to the test signal, and the pulse signal and the idle signal being continuously transmitted while the master diagnostic state machine controls transmission of the command signal and reception of the far end crosstalk data signal and the slave diagnostic state machine controls reception of the command signal and transmission of the test signal.

The closest prior art, either singularly or in combination, fail to anticipate or render the above limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 1-47 being allowable, **Prosecution On The Merits Is Closed** in this application.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. DeJaco et al. (US 5,784,406) discloses a method and apparatus for objectively characterizing communications link quality.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pezzlo whose telephone number is (571) 272-3090. The examiner can normally be reached on Monday to Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C.

or faxed to:

(571) 273-8300

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For informal or draft communications, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

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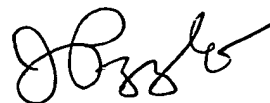
2A15

500 Dulany Street

Alexandria, VA, 22313.

John Pezzlo

7 February 2006

A handwritten signature in black ink, appearing to read 'J. Pezzlo', with a stylized flourish at the end.

**JOHN PEZZLO
PRIMARY EXAMINER**